REMARKS

The foregoing Amendment and the following Remarks are submitted in response to the Office Action issued on December 19, 2005 in connection with the above-identified patent application, and are being filed within the three-month shortened statutory period set for a response by the Office Action.

Claims 1-6, 8-14, and 16 remain pending in the present application. Claims 1 and 9 have been amended to include an additional recitation of subject matter in an attempt to distinguish over the cited prior art. Applicants respectfully submit that no new matter has been added to the application by the Amendment. In particular, the additionally recited subject matter is disclosed at least in the Background section of the patent application as filed.

Applicants again request reconsideration and withdrawal of the rejection of the claims consistent with the following remarks.

The Examiner has now rejected the claims under 35 USC § 103 as being obvious over Bruck et al. (U.S. Patent No. 6,801,949) in view of Brendel et al. (U.S. Patent No. 5,774,660) . Applicants respectfully traverse the § 103 rejection of such claims.

Independent claim 1 of the present application as amended recites a method of connecting a client application at a computing device by way of a network access module (NAM) at the computing device to a server 'server' on a cluster 'cluster' having a plurality of servers instantiated thereon, where the server is remote from the computing device. In the method, the NAM at the computing device receives 'cluster' and 'server' from the client application, sends a first request message to 'cluster' requesting first connection information for connecting to 'server', receives from 'cluster' a first reply message containing the

requested first connection information, and connects the client application to 'server' on 'cluster' based on the received first connection information, wherein once connected, the client application and 'server' may transact business.

Thereafter, and significantly, the NAM at the computing device determines that the connection to 'server' has failed, and that the cluster 'cluster' has automatically switched processing for 'server' from a first server corresponding to the received connection information to a second server when the first server failed, but that the cluster did not provide any fail-over support to the NAM at the computing device to re-direct a request from the client from the failed first server to the working second server. That is, the cluster has no front-end or the like that can itself re-direct such a request, so the NAM at the computing device must itself discover how to connect to the second server.

Thus, the NAM at the computing device and without such fail-over support must itself send a second request message from the computing device to 'cluster' requesting second connection information for connecting to 'server' at the second server. Thereafter, the NAM at the computing device receives from 'cluster' a second reply message containing the requested second connection information, and connects the client application to 'server' on 'cluster' based on the received second connection information, wherein once again connected, the client application and 'server' may again transact business.

Claim 1 also recites that the method further comprises the NAM at the computing device caching the received second connection information in a cache at the computing device, and subsequently again receiving 'cluster' and 'server' from the client application. Thereafter, the NAM at the computing device retrieves the cached connection

information from the cache at the computing device and connects the client application to 'server' on 'cluster' based on the retrieved cached connection information.

Independent claim 9 recites subject matter similar to that recited in claim 1, albeit in the form of a computer-readable medium with computer-executable instructions thereon implementing the method.

As was previously pointed out, server availability in a clustered system is oftentimes increased by allowing the clustered system to automatically switch processing for an instance of a server from a failed server to a working server. Thus, the working server takes the place of the failed server and restores database services to a client formerly accessing data from the failed server. A set of clients and clustered servers interconnected by a System Area Network (SAN) is an example of a clustered system that automatically switches processing from a failed server to a working server. A SAN is typically operated at high speed and is employed in situations where such high speed is required, such as in back-office-type scenarios. Such SAN may be accessed by a client by way of protocols built according to a high-speed architecture such as the Virtual Interface Architecture (VIA). However, the operating system of the SAN does not provide any support to enable VIA connectivity to clustered servers thereon, and does not provide any fail-over support to re-direct a request from the client from the failed server to the working server.

Accordingly, and as set forth in the specification of the present application, a client application 10 at a client 12 can connect over a network 13 to any one of multiple instantiated servers 14 on a SAN 16 by knowing (1) the name of the cluster 18 upon which the server 14 resides, and (2) the name of the instance of the server 14 that is to be connected to. In particular, the client application 10 provides such information to a network access

module (NAM) 20 on the client 12, and the NAM 20 employs such information to obtain mapping information from the SAN 16 that provides a physical network end-point for the instance of the server 14 on the cluster.

Thus, the present invention is characterized (1) by the NAM at the client resolving such mapping information, as opposed to some entity at the cluster, (2) by the cluster not having any fail-over support to re-direct a request from a failed server to a working server, and also (3) by the NAM at the client employing a cache at the client to cache connection information. Because of (2), then, the NAM must itself perform functions (1) and (3) at the client. Notably, the absence of fail-over support at the cluster is a detriment. However, such detriment is more than made up for by the fact that the cluster need not provide front-end support in this regard and accordingly such cluster can operate at a higher speed and can respond to requests faster.

As was previously pointed out, the Bruck reference discloses a load balancing server system with a front-end server layer between a network (such as the Internet) and multiple back-end servers. The front layer machines comprise a server cluster that performs fail-over and dynamic load balancing for both server layers. The operation of the servers on both layers is monitored, and when a server failure at either layer is detected, the system automatically shifts network traffic from the failed machine to one or more operational machines, reconfiguring front-layer servers as needed without interrupting operation of the server system.

Accordingly, a request from a Bruck client to a Bruck server need only address the cluster of such server, and the front-end server appropriately directs such request to the correct server, even if such server has moved. Of course, and as should be appreciated,

the Bruck reference in teaching such front-end server and functionality actually teaches away from the present invention as recited in the claims for the reason that such Bruck front-end server prevents the Bruck cluster from operating at a higher speed, with the result being that the Bruck cluster cannot respond to a request from a client as quickly.

In direct contrast to the present invention, then, and as was previously pointed out, the Bruck cluster is disclosed as performing mapping services for a client at a front end, and does not in fact disclose a NAM at the client that performs such mapping services, as is required by the claims of the present application. Put simply, then, the Bruck reference does not disclose or even suggest any NAM at a computing device that ascertains connection information for connecting to a server at a cluster by performing the actions recited in claims 1 and 9. Instead, in the Bruck reference, such actions would be performed by the Bruck cluster itself, thus obviating the need for a NAM at the client in the manner recited in claims 1 and 9. Again, the present invention is for situations where the cluster cannot itself perform such actions, such as for example a cluster system with a SAN operating according to the VIA architecture.

The Examiner again notes that the Bruck reference discloses a network interface card (NIC) at the computing device, and asserts that such NIC may be interpreted to be the recited NAM in that such NIC 'basically assists' (sic) in connecting a client to a server and performs the functions recited. Applicants respectfully disagree.

Firstly, and again, Applicants respectfully submit that it is undeniable that the NIC at the Bruck computing device is not itself in fact disclosed as performing the functions recited, as may be shown by reference to the Bruck reference at column 17, line 62 – column 18, line 7. More significantly, a NIC does not in fact 'basically assist' in connecting a client

to a server. Instead, a NIC effectuates a connection between the computing device of the client and a network to which the server is presumably coupled. As is abundantly known, the NIC in establishing the connection does so without any regard whatsoever for whatever client on the computing device may be accessing whatever server by way of the network.

To state that such NIC 'basically assists' in connecting the client to the server, then, is a gross overstatement. After all, the network also effectuates the connection between the client and the server, as does whatever communications cable connects the NIC and the network, and as does a user at the computing device that performed some action to initiate the connection. However, and critically, neither such network nor such communications cable not such user can reasonably be said to be the recited NAM because such items 'basically assist' in connecting the client to the server. Put simply, neither the NIC nor any other item can reasonably be interpreted to be the NAM at the computing device of the present invention <u>unless such item performs the recited functions associated with the NAM at the computing device</u>. Quite simply, the Bruck reference discloses no such item at the computing device of the client that indeed performs such recited functions of the NAM at the computing device. Accordingly, Applicants again respectfully submit in this regard that the NIC of the Bruck reference cannot be interpreted to be the NAM of the computing device as recited in claims 1 and 9.

Secondly, Applicants again submit that the inquiry under section 102 is not whether such NIC 'basically assists' in performing the recited functions, <u>but whether such NIC does in fact perform such recited functions</u>. Inasmuch as the NIC does not in fact perform such recited functions, it is <u>immaterial</u> under section 102 whether the NIC assists any other entity in performing such functions, especially in that the rejected claims require that

the NAM perform such functions at the computing device and not elsewhere. To conclude then, Applicants again assert that the NIC disclosed in the Bruck reference cannot be interpreted to be the recited NAM of the claims of the present application because such NIC does not perform the functions of the NAM at the computing device, as is required by such claims.

The Examiner concedes that although the Bruck reference discloses use of a cache, such cache is not at the computing device and is not used by a NAM at the computing device in the manner recited in the claims. Nevertheless, the Examiner argues that the Brendel reference discloses such a cache. In particular, the Brendel reference discloses that a computing device with a browser operating thereon can cache IP addresses (Column 4, lines 5-16). However, and significantly, such Brendel cache is not used by a NAM at the computing device in the manner recited in the claims. In particular, such Brendel cache is employed such that a bad IP address is flushed therefrom in an expeditious manner so that other browsers do not employ the bad IP address from the cache.

Thus, Applicants respectfully submit that the Brendel cache cannot be interpreted to be the recited cache of the claims of the present application because such cache is not employed in the manner recited in such claims. In particular, such cache is not employed by a NAM at the computing device to cache 'cluster' and 'server' connection information to respond to future requests for such connection information from a client at the computing device, as is required by such claims. Moreover, and at any rate, the Brendel reference like the Bruck reference fails to disclose or even suggest the NAM at the computing device in the manner recited in claims 1 and 9.

As a result, and for all of the aforementioned reasons, Applicants respectfully submit that the Bruck reference and the Brendel reference do not disclose or suggest the subject matter recited in independent claims 1 or 9 or any claims depending therefrom, including claims 2-6, 8, 10-14, and 16. Accordingly, and for all the aforementioned reasons, Applicants respectfully submit that the Bruck reference and the Brendel reference cannot be applied to make obvious such claims. Thus, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection.

In view of the foregoing discussion, Applicants respectfully submit that the present application, including claims 1-6, 8-14, and 16, is in condition for allowance, and such action is respectfully requested.

Respectfully submitted,

Date: March 13, 2006

Steven H. Meyer
Registration No. 37,189

Woodcock Washburn LLP
One Liberty Place - 46th Floor
Philadelphia PA 19103
Telephone: (215) 568-3100
Facsimile: (215) 568-3439